

WATER SUPPLY SYSTEMS

Module I

Instructions: Water Requirements, Sources of Water, Water Supply Considerations, Water Quality, Drinking Water Standards Secondary Standards – Toxic Water Pollutants, Quality Criteria for Surface Water, Purpose of Water Treatment – Selection of Water Processes , Water – Processing Sludges.

Module II

Conventional treatment Processes: Sedimentation, Type of Sedimentation, Zone Setting, Filtration, Gravity Granular-Media Filtration, Head Losses, Back Washing and Media Fluidization – Pressure Filters – Slow Sand Filters, Coagulation and Flocculation Coagulants, Coagulants, Coagulant Aids, Rapid Mixing Devices, Disinfection, Disinfection Methods, Cl₂ handling and Dosage, Control of Thms, Fluoridation, Defluoridation.

Module III

Water Softening: Lime soda Process, Variations-Ion Exchange Softening and Nitrate Removal. Iron and Manganese Removal: Iron Corrosion, Water Stabilization-Cathodic Protection.

Module IV

Taste and Odour: Methods for Control, Aeration, Adsorption, Control of Algae Growth. Reduction of Dissolved Salts: Distillation, Reverse Osmosis, Electro dialysis. Transportation and Distribution of Water: Aqueducts, Hydraulic Consideration, Design of Transportation System, Distribution Reservoirs and Service Storage.

References

1. Viessman Jr., Mark J. Hammer “Water Supply and Pollution Control”. Mc Graw Hill International Edition.
2. Peavy, H.S., H.S., Row, D.R. and Tchobanaglou, G. “Environmental Engineering”. Mc Graw Hill International Edition.
3. Fair, Geyer, Okun “Water Supply Engineering”. John Wiley.
4. Turbuit T H Y “Principles of Water Quality Control”, Pergamon Press.